

I CLAIM:

1. A turret lathe comprising:

a bed having two opposite ends;

a headstock mounted on one of said opposite ends
5 of said bed;

a driving unit mounted on said bed;

a spindle journaled to said headstock and
driven by said driving unit to rotate about a rotation
axis;

10 a chuck mounted on said spindle;

a first slide mounted slidably on the other of
said opposite ends of said bed and slidable toward
and away from said chuck in a longitudinal direction
parallel to said rotation axis;

15 a second slide mounted slidably on said first
slide and slidable toward and away from said rotation
axis in a transverse direction relative to said
longitudinal direction;

a tailstock mounted on said second slide;

20 a driven shaft journaled to said tailstock;

a turret mounted on said driven shaft so as to
co-rotate therewith, disposed between said chuck and
said tailstock, and adapted to permit mounting of a
plurality of tools thereon;

25 a transmission unit associated with said spindle
and said driven shaft; and

a clutch that is associated with said

transmission unit and said spindle and that is operable between a chamfering operation mode, in which said transmission unit interconnects said spindle and said driven shaft through said clutch, thereby permitting co-rotation of said spindle and said driven shaft, and a turning operation mode, in which said spindle is disconnected from said driven shaft, thereby avoiding rotation of said driven shaft when said spindle rotates.

2. The turret lathe of Claim 1, wherein said transmission unit includes a first pulley that is associated with said clutch, an input shaft that is journaled to said headstock and that is parallel to said rotation axis, a second pulley that is co-axially mounted on said input shaft, a belt that is trained on said first and second pulleys, first and second universal joints, an output shaft that is journaled to said tailstock, that is parallel to said rotation axis, and that is connected to said driven shaft, and a telescopic connecting member that is disposed between and that interconnects said input and output shafts through said first and second universal joints and that is telescopically extendable in said longitudinal direction, said first pulley being connected to said spindle through said clutch when said clutch is operated at said chamfering operation mode, and being disconnected from said spindle when

said clutch is operated at said turning operation mode.

3. The turret lathe of Claim 2, further comprising a first locking unit including a first piston-
5 and-cylinder assembly that is mounted on said headstock and that includes a first piston having an engaging end, a first locking disc that is connected to said first pulley and that is formed with an engaging groove, a second driving unit connected to
10 said first locking disc, and a sensor that detects an angular position of said first locking disc and that is electrically connected to said second driving unit so as to actuate said second driving unit to rotate said first locking disc to a position, in which
15 said engaging groove in said first locking disc is aligned with said engaging end of said first piston, said first piston-and-cylinder assembly being operable between a first engaging position, in which said engaging end of said first piston extends into
20 and engages said engaging groove in said first locking disc when said clutch is operated at said turning operation mode, thereby preventing undesired rotation of said first pulley by virtue of said clutch upon rotation of said spindle, and a first disengaging
25 position, in which said engaging end of said first piston disengages from said engaging groove in said first locking disc when said clutch is operated at

said chamfering operation mode.

4. The turret lathe of Claim 3, further comprising a second locking unit including a second piston-and-cylinder assembly that is mounted on said
5 tailstock and that includes a second piston having an engaging end, and a second locking disc that is co-axially mounted on said driven shaft and that is formed with a plurality of engaging grooves which are adapted to be respectively aligned with the tools in
10 said longitudinal direction, said second piston-and-cylinder assembly being operable between a second engaging position, in which said engaging end of said second piston extends into and engages a selected one of said engaging grooves in said second locking disc
15 when said clutch is operated at said turning operation mode, thereby preventing rotation of said driven shaft during a cutting operation, and a second disengaging position, in which said engaging end of said second piston disengages from the selected one
20 of said engaging grooves in said second locking disc when said clutch is operated at said chamfering operation mode.